No. 15

AUGUST 1952

NORTHEASTERN RESEARCH NOTES

NORTHEASTERN FOREST EXPERIMENT STATION
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DEER REPELLENT FAILS TO PROTECT PINE SEEDLINGS

In some parts of the Northeast, browsing by deer is one of the major obstacles to successful forest regeneration. Untold damage is done every year to farm crops, gardens, and ornamental plantings in the region as a whole.

A reliable deer repellent--even though its use in general forestry might not be practical--would be of great value for protecting research plots, nurseries, Christmas-tree plantations, and ornamentals.

In the search for an effective deer repellent, a commercial preparation that has been reported on favorably in other regions was tested in New Jersey and Pennsylvania, to find out if it would protect pine seedlings over

winter. The active ingredients of this repellent, according to the manufacturer, are zinc-dithiocarbamate-amine complex plus polyethylene polysulfide.

The Tests

In New Jersey, the repellent was tested in the winter of 1949-50 on natural pitch and shortleaf pine reproduction on a cut-over area. Six 1/40-acre plots were used. Average density of seedlings (0.1 to 4.2 feet tall) was 5,600 per acre.

The repellent was prepared according to the manufacturer's specifications: 1 pound in 2½ gallons of water, or about 2 percent by weight of active ingredients. It was applied as spray, by means of a jeep equipped with transmission pump. Two plots were treated once, in October. Two were treated twice, in October and January. Two were left untreated.

The cost was $80 per acre for material and labor (at $1 per man-hour). Equipment charges were not included in this figure.

In Pennsylvania, the repellent was tested in the winter of 1950-51 on planted white pine seedlings. On four 1/5-acre plots, all living seedlings on one-half of each plot were sprayed with the repellent, in October. The total number of seedlings treated was 242.

The spray was used at the same strength as

in the New Jersey tests. The job was done with a 4-gallon garden-type sprayer.

Results

In the New Jersey test, there was a slight--but scarcely significant--difference in favor of the treated trees. Small seedlings were browsed more intensively than the larger ones. In the 0.1- to 1.0-foot height class, 72 percent of the untreated trees were browsed by deer. Of the treated trees, 61 percent of those sprayed once were browsed, and 60 percent of those sprayed twice.

In the Pennsylvania test there was no difference at all. Here browsing was concentrated on the larger seedlings, which were, however, generally less than 1½ feet tall. (The smaller seedlings passed up by the deer had been so eaten back in earlier browsing that they no longer offered a tempting bite; also they were more often covered by litter or snow.)

In the spring after treatment, 201 treated trees and 209 untreated trees were found alive. In each group, 40 percent had been browsed.

Conclusions

This deer repellent possibly may provide protection for a few weeks: we have no evidence on this. But even if it is temporarily effective, the cost and bother of repeated applica-

tions would be prohibitive except perhaps for very valuable ornamentals.

An effective deer repellent for protecting research plots and similar tree plantings in the Northeast has yet to be found.

--W. E. McQUILKIN and S. LITTLE

Some Recent Publications

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